

The Athenian Mercury:

Saturday July 1. 1693.



Quest. 1. **W**E had some time since a Letter sent us, desiring our Opinion of the Nature of Plants, *As whether they are capable of pain when cut, or broken, &c. To which we shall endeavour to give a full Answer?*

Ans. Whether the Nature of this Question may cause a greater pity for the Querist and Author, or surprize in the Reader, at the Novelty, is no great matter: But perhaps the prejudice may not be altogether so great, after a few Observations for the Affirmative, as may appear at first sight.

We shall first consider their Generation; they have now for some thousand Years lain under the same scandal that Insects have, *viz.* That they are produc'd by Equivocal Generation. It would be too tedious (only for Comparisons sake) to run over the old receiv'd Opinions, that Salt holds the place of the Masculine Seed, and Humidity the Feminine, and by this means Excrements produce Beetles, Flies, Worms, and other Insects, Sweat and Urine produce Lice and Fleas, the slime of Marshes generates Frogs, being very Nitrous, Boats of Salt produce Rats, which conceive others by licking the Salt, Bees come from Oxen, Hornets from Horses, Scorpions from Crabfish, the Marrow of a Back-bone turns to a Serpent, with a hundred more such fabulous idle Stories; for by the help of Microscopes We have discover'd, that all Animals and Insects, however mean and despicable, are produc'd from Parents of their own Species, even to a Knat or a Mite.

Francisco Redi, upon the innumerable Tryals that he made with putrid Flesh of all sorts, corrupted Cheese, Fruits, Herbs, and Insects themselves, constantly found that all these kinds of putrefaction only afforded a Nest and Aliment for the Young of these Insects that he admitted to come to them, and when he seal'd 'em up in Glasses, Vessels cover'd with Paper, fine Lawn, &c. nothing was ever produc'd, even in the warm Climate of Florence. *Malpighius* also has observ'd, that those Tumours and Excrecences of Plants, Leaves, &c. that yield Flies and Worms, are first made by such Insects which wound the tender buds with a hollow trunk, and deposite an Egg in the hole with a sharp corrosive liquor, which causeth a swelling in the Leaf, and so shattereth up the Orifice. We need not add the Experiments of *Leuwenhoeck*, and others, since now this Doctrine of Equivocal Generation is universally exploded.

As in the Generation of Insects, (which are all of Seminal production) so in Plants, Shrubs, Corn, nay, even Grass it self, which of all Vegetatives has been suppos'd to spring spontaneously out of the Earth, by the help of the Sun and Rain, and proper Fermentations. We need not run thro' all the Experiments that have been upon this Head, We shall only confine ourselves to show, that nothing, even so much as Grass, is producible on the Earth without Seed, as most disputable. We need not Answer the Objection, that God Almighty commanded the Earth to bring forth Grass, since it had the same Command for Trees bearing Fruit, and therefore cou'd only relate to the first Creation, not a continued Succession of productions after the same manner: But to the Experiment.

Malpighius (that curious Naturalist whom We have before mention'd) shows, that the Earth which has no Seed in it self, can produce nothing at all. He caus'd to be digg'd a pretty deep Pit, and took of the Earth of it, which he put into a Glass, that he might the more conveniently see whether it produc'd Grass, or any thing else; this Glass he cover'd with fine

Lawn several heights above one another, to keep the smallest Seeds from falling into it, as also that it might have the Conveniency of the Air; and after having expos'd this Vessel to the Air for a long time, he found nothing at all to grow in it, but having put some Seeds into it, they sprang up, and grew immediately.

If it be Objected, that in London after the Plague Grass grew in the Streets, being not hindred by treading upon it, and that all High-ways sprung up with Grass when unfrequented, 'tis easily Answer'd, that Seed of Grass is easily carry'd by the Wind from one place to another; but besides, there's no need of such a supply where the Roots of Grass are left behind, which will spring up when at liberty, but in such places as there is neither Root nor Seed, as in the above Experiment, there will be nothing at all produc'd.

Thus the Generation of Plants, Herbs, &c. is as certainly equivocal as that of Brutes and Men, *viz.* produced as one Fire kindles another, and therefore no Prerogative can be claim'd by one above another, as to their Generation.

As to the Nutrition, Encrease, &c. of Vegetables, I come to consider them, but We shall also examine their Organs, and what Relation and Similitude they bear to those of Brutes, and consequently to Ours. Mr. *König. Philosoph. & Med. Dr. Basil*, is very positive in his *Kingdom of Vegetables*, that there is nothing in Animals, but there's some Resemblance of it in Plants, and for the most part they have the same Parts and Organs with them, when they geminate under the ground, the foetus which is form'd in the Matrix is visible, with him also *M. Malpighius* agrees, who has so far consider'd, and curiously examin'd their Nature, "That offers to show in Plants all the same parts which serve to the diverse Functions of Life in Men and Beasts, such as are for reception of the Air for the use of the plant, those which serve to the Concoction and digestion of the Aliment, the Circulation of the Nutritive Succus, the Excretion or excretion of Superfluities, the Womb, with the several Apartments and Membranes which envelop the foetus. Mr. *König* gives but a very lame Definition of the Soul of Vegetables, but however he agrees with me, that this Soul is the principle of their Vegetation, and of Nutrition, Encrease, Propagation, &c. since there's no Laws (as yet known) of matter that can cause such Circulations and Motions as are in the Succus Nutritivus, and other parts of Plants. He has very well remark'd that they have not only the same Organs destin'd to the same uses, but that they resemble 'em in infinite respects, the same Accidents, and the same revolutions happen to them in common with Animals, they increase, feed, are vigorous, sick and dye. Nor can we be assur'd that they have not Thought, and are sensible of Pain and Pleasure in the proper Functions of their Nature, but we have rather some very good Reasons to believe the Affirmative. 'Tis unquestionable, that not only in different Species, but often in the very same Kind, there is a vast difference as to the complexion and constitution of all Creatures, those which are most tenderly and delicately bred, give their Arteries the liberty of spreading into extream fine branches, and thereby become extream sensible of Pain, or Pleasure; 'tis so in the Vegetative World, some Trees, Plants, Herbs, &c. that are carefully manur'd, and look'd after, are much sooner blasted than the wild Mountainous ones, which are continually expos'd to the severity of Wind and Weather; therefore if we can possibly produce some Instances of the Sensibility of Plants, we shall bid fair to prove it essential to the whole, only by Accidents, severer Usage, difference of

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Contextures, &c. it may not be so apparent in all ; and it's no Argument that a thing is not, because we cannot see or understand it. There is a Sensitive Plant growing, as *Scaliger* and others relate in *Zonolha*, a part of *Tartary*, where the Inhabitants sow a sort of a Grain much like that of our Mellons, but somewhat longer, from which grows an Herb which they call *Borrancetz*, (or a Lamb) for it is just like one, having Feet, Horns, Ears ; it taits much like a Crevice, and grows to the Earth by a Root which enters in at its Navel, and it Eats all the Grass about it, as far as it can reach, and dyes when it has no more Food. *Anthony Pigaset* (as I remember) tells us of a Tree much like a Mulberry, which has Leaves with little Feet, that it uses when fall'n off the Tree to run away from those that come near it : But *Pliny* is very positive as to his Balsom-tree, which trembles when the Ax is near it : And *Scaliger*, a more credible Author (if the two last be suspected) tells us of the *Arbor pudica*, which upon the approach of a Man or other Animal Contracts its Boughs, and extends them again upon their Departure, which is also observable in the *Spongia*, there is such an Uniformity in Nature between some Plants and Animals, that there's scarce any difference but in local Motion, which yet is found in some, as the Gourd and Cucumber, which follow the Neighbouring Water, and shape their Fruit in length to reach it. The *Herba Viva* of *Acosta* folds up its Leaves and Flowers when toucht, *Tulips* do the same in the Evening ; the *Carline Thistle*, call'd *The Peasants Almanack*, folds up its Flowers when a Tempest is at hand ; and innumerable more such Instances are there, which would perswade us that all Vegetatives have Sense as well as Life, only the ruggedness of the Contexture and Frame of most makes it imperceptible to us. We might carry the matter yet higher, but yet with a Question which we leave to the Ingenious, *Whether since they have Sense, (some of 'em at least apparently) they may not be said to make rational Inferences, and be guided by a Soul capable of Abstract Speculations ?*

Quest. 2. *I have an Acquaintance now in Newgate for Clipping, and I can't perswade him that 'tis a Sin, pray your thoughts upon it, if possibly it may alter his Judgment, and make him apprehend what danger he is in from the Law of God, as well as that of Man.*

Ans. There's no body that has the Cunning to know the Methods of Clipping, but he must also have the Sense to know he is a dead Man, if he be discover'd ; the consequence is, that he is a hardy wilfull Self-murderer, because he does that which (so many Examples almost every Sessions) does prove fatal to the Criminal, and who is he that being accessary to his own Destruction can flatter himself with the thoughts of impeccability ? He that Clips the current Money of the Kingdom is guilty of a Cheat, and where's the difference betwixt one that robs by Wholesale and another that Thieves by Retail ; 'tis a Breach of the 5th. and 9th. Command ; of the Fifth, for under the Term Father and Mother is universally understood not only our Natural Parents, but all Magistrates, Princes, Kings, &c. but this strikes at the Regal Power, thro' the bare Effigies stamp't upon the Money : The Ninth, in the Cheat, and Coveting what is not our own. Such as would confine the Fifth Command to Natural Parents, may be sufficiently assur'd of a greater Latitude, if they Consider the Penalty (if the Condition is not performed) of living but a little time in the Land which the Lord his God giveth him ; for the Negative is always imploy'd under a contrary Supposition : And how many Instances do we find of Persons who are cut off in the midst of their days, for this and other irreverend and ill Misdemeanours to the Patriots or Fathers of their Country, and the wholsom establish'd Laws. To think this is no Sin, is to Condemn the Prudence and Knowledge of so many great and good Men who have establish'd such a Penalty for it, and yet continue it. But what is yet of sadder Consequence to these deluded Wretches, they may with Terror Consider, that Magistrates are set up by God, therefore whoever flights that Ordinance condemns God himself, who has Commanded us to be

Subject and Obedient to Magistrates and Laws, not only for Wrath or Fear of Punishment, but for Conscience ; therefore this Honour to them will be exacted and brought into the great Account at the last Day. Besides all this, the many Mischiefs and Inconveniencies that this Trade of Clipping would soon involve a Commonwealth into, as to Trade, &c. especially in all Foreign Exchanges of Moneys, where such Money would go but for its Weight. Lastly, Such Persons are to consider that God is just, and would not permit such grievous Punishments to fall upon them, if their Sins did not deserve it, and therefore instead of extenuating their Guilt, they ought to humble themselves, and rather aggravate their Sins if possibly they may find Grace to Repent and be Pardon'd.

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